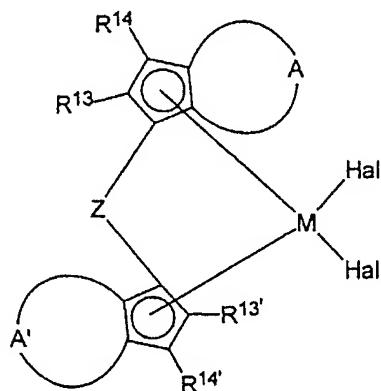
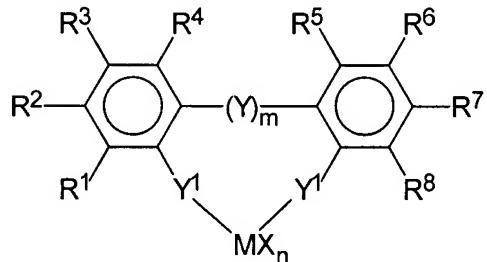


AMENDMENTS TO THE CLAIMS

1. (currently amended) A process for preparing partially hydrogenated, racemic ansa-metallocene complexes of formula Via



by reacting bridged or unbridged transition metal-aromatic complexes of the formula I



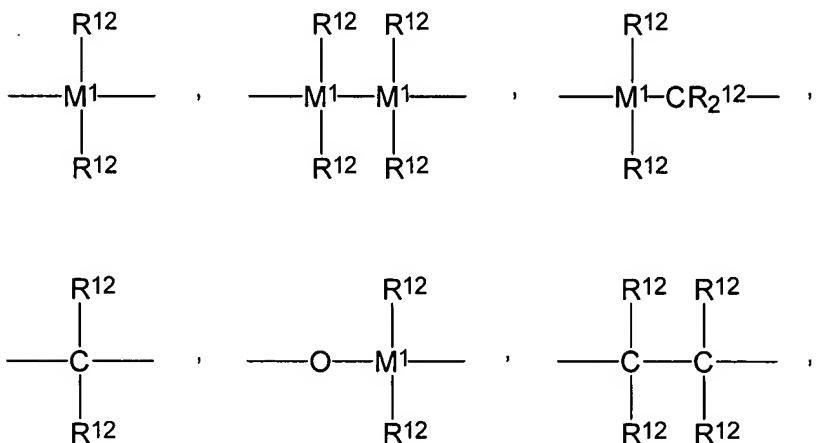
(I)

where the substituents and indices have the following meanings:

M is titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten or an element of transition group III of the Periodic Table and the lanthanides,

X are identical or different and are each fluorine, chlorine, bromine, iodine, hydrogen, C<sub>1</sub>–C<sub>10</sub>–alkyl, C<sub>6</sub>–C<sub>15</sub>–aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, –OR<sup>10</sup> or –NR<sup>10</sup>R<sup>11</sup>,

$n$  is an integer from 1 to 4 and corresponds to the valence of  $M$  minus 2,  
 $R^1$  to  $R^8$  are identical or different and are each hydrogen, halogen,  $C_1$ – $C_{20}$ –alkyl, 3– to 8–membered cycloalkyl which may in turn bear a  $C_1$ – $C_{10}$ –alkyl group as substituent,  $C_6$ – $C_{15}$ –aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, arylalkyl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, where adjacent radicals from  $R^2$  to  $R^7$  may also form saturated, partially saturated or unsaturated cyclic groups having from 4 to 15 carbon atoms,  $Si(R^9)_3$ ,  $-OR^{10}$ ,  $-SR^{10}$ ,  $-N(R^{10})_2$ ,  $-P(R^{10})_2$ , and all the abovementioned radicals may be fully or partially substituted by heteroatoms,  
 $R^9$  are identical or different and are each  $C_1$ – $C_{20}$ –alkyl,  $C_3$ – $C_{10}$ –cycloalkyl,  $C_6$ – $C_{15}$ –aryl, where the radicals mentioned may be partially or fully substituted by heteroatoms,  
 $R^{10}$  are identical or different and are each  $C_1$ – $C_{10}$ –alkyl,  $C_6$ – $C_{15}$ –aryl,  $C_3$ – $C_{10}$ –cycloalkyl, alkylaryl or  $Si(R^{11})_3$ ,  
 $R^{11}$  are identical or different and are each  $C_1$ – $C_{10}$ –alkyl,  $C_6$ – $C_{15}$ –aryl,  $C_3$ – $C_{10}$ –cycloalkyl, alkylaryl;  
 $Y, Y^1$  are identical or different and are each



or  $=BR^{12}$ ,  $=AlR^{12}$ ,  $-Ge-$ ,  $-Sn-$ ,  $-O-$ ,  $-S-$ ,  $=SO$ ,  $=SO_2$ ,  $=NR^{12}$ ,  $=CO$ ,  $=PR^{12}$  or  $=P(O)R^{12}$ ,

where

$R^{12}$  are identical or different and are each hydrogen, halogen,  $C_1$ – $C_{10}$ –alkyl,  $C_1$ – $C_{10}$ –fluoroalkyl,  $C_6$ – $C_{10}$ –fluoroaryl,  $C_6$ – $C_{10}$ –aryl,  $C_1$ – $C_{10}$ –alkoxy,  $C_2$ – $C_{10}$ –

alkenyl, C<sub>7</sub>–C<sub>40</sub>–arylalkyl, C<sub>8</sub>–C<sub>40</sub>–arylalkenyl, C<sub>7</sub>–C<sub>40</sub>–alkylaryl, or two radicals R<sup>12</sup> together with the atoms connecting them form a ring,

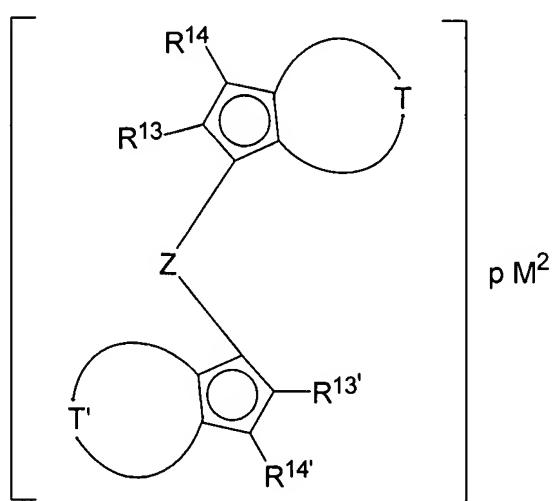
M<sup>1</sup> is silicon, germanium or tin and

m is 0, 1, 2 or 3, or

Y is nonbridging and represents two radicals R' and R" where

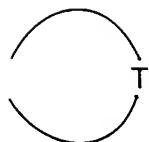
R', R" are as defined for R<sup>1</sup> to R<sup>8</sup> and R', R" together with adjacent radicals R<sup>4</sup>, R<sup>5</sup> may also form saturated, partially saturated or unsaturated cyclic groups having from 4 to 15 carbon atoms,

with cyclopentadienyl derivatives of the formula II

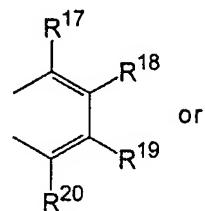


(II)

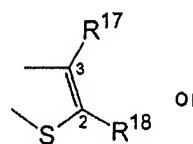
where



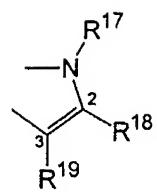
is a divalent group such as



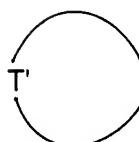
or



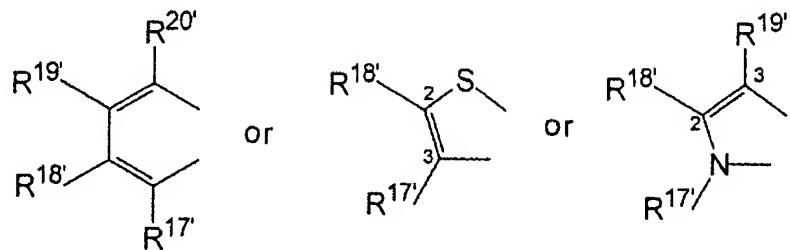
or



and



is a divalent group such as



and the substituents and indices have the following meanings:

$R^{13}, R^{13'}$ ,  $R^{14}, R^{14'}$  are identical or different and are each hydrogen, halogen,  $C_1-C_{20}$ -alkyl, 3- to 8-membered cycloalkyl which may in turn bear a  $C_1-C_{10}$ -alkyl group as substituent,  $C_6-C_{15}$ -aryl, alkylaryl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part, arylalkyl having from 1 to 10 carbon atoms in the alkyl part and from 6 to 20 carbon atoms in the aryl part,  $-OR^{10}$ ,  $-SR^{10}$ ,  $-N(R^{10})_2$ ,  $-P(R^{10})_2$  or  $Si(R^9)_3$ ,

$Z$  is a  $-[Q(R^{15})(R^{16})]_q-$  group, where

$Q$  may be identical or different and are each silicon, germanium, tin or carbon,

$R^{15}, R^{16}$  are each hydrogen,  $C_1-C_{10}$ -alkyl,  $C_3-C_{10}$ -cycloalkyl or  $C_6-C_{15}$ -aryl, and

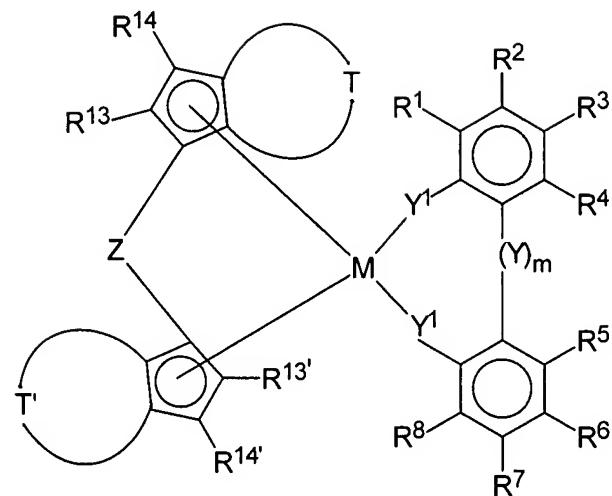
$q$  is 1, 2, 3 or 4;

$R^{17}-R^{20}$ ,  $R^{17'}-R^{20'}$  are identical or different and are each hydrogen,  $C_1-C_{20}$ -alkyl, 3-to 8-membered cycloalkyl which may in turn bear a  $C_1-C_{10}$ -alkyl group as substituent,  $C_6-C_{15}$ -aryl or arylalkyl, where adjacent radicals may together form cyclic groups having from 4 to 15 carbon atoms, or  $Si(R^{11})_3$ , and

$M^2$  is an alkali metal ion or alkaline earth metal ion, and

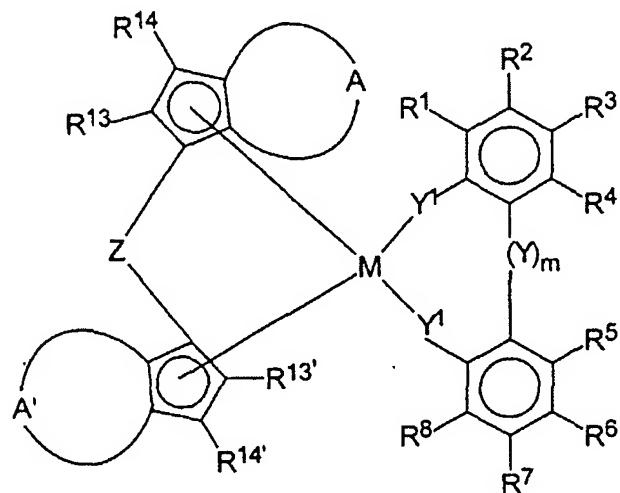
$p$  is 1 when  $M^2$  is an alkaline earth metal ion and is 2 when  $M^2$  is an alkali metal ion;

and heating the resulting reacton mixture to a temperature in the range from minus 78°C to 250°C, with or without addition of free radicals or free radical formers, to give a complex of the formula III



(III)

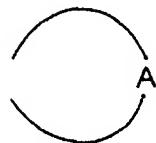
and at least partially hydrogenating III by means of hydrogen in the presence of a suitable catalyst to a complex of formula VI



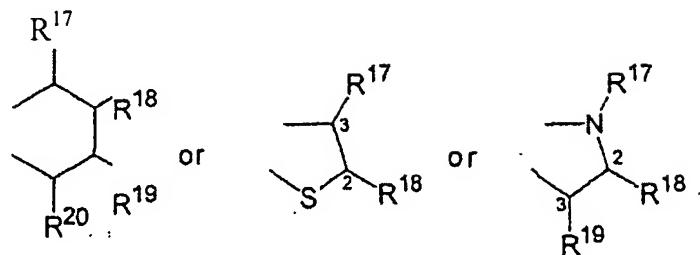
(VI)

and replacing the bridged phenoxide-analogous ligand or the two phenoxide-analogous ligands to give the complexes of formula VIa

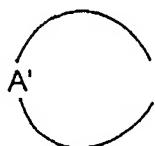
where



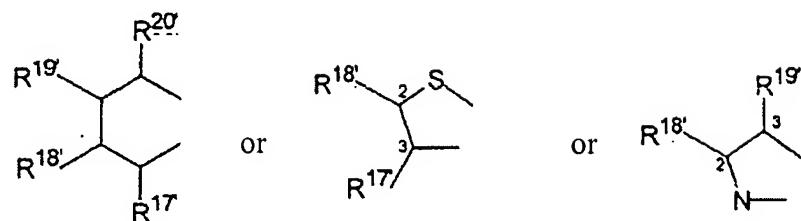
is a divalent group such as



and



is a divalent group such as



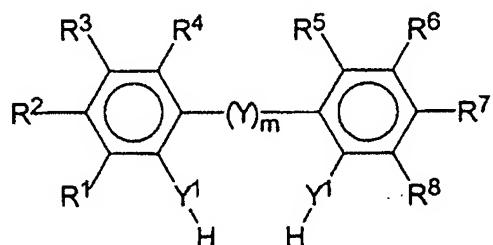
and

Hal is fluorine, chlorine, bromine or iodine.

2. (Original) A process as claimed in claim 1, wherein  $Y^1$  are identical and are each oxygen.

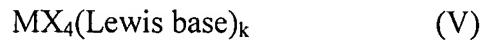
3. (currently amended) A process as claimed in claim 1, claim 1, or 2, wherein the hydrogenation is carried out in the presence of homogeneous or heterogeneous catalysts such as Pt, Pd, Rh, Ru, Os or nickel, Raney nickel, their oxides, salts or complexes, mixtures thereof, if desired and optionally on suitable catalyst supports, particularly preferably in the presence of Pd on activated carbon.

4. (currently amended) A process as claimed in claim 1, any of claims 1 to 3, wherein the complex of the formula I is firstly prepared by deprotonation of compounds of the formula IV



(IV)

and subsequent reaction of the deprotonated compound(s) with a suitable transition metal compound of formula V



where all radicals are as defined in claim 1 and k is 0, 1 or 2, and the complex of the formula I prepared in this way is converted in the reaction solution without isolation of intermediates into the complex of the formula IV.

5. (Currently amended) A process as claimed in claim 1, any of claims 1 to 4 for preparing ethanediylbis(4,5,6,7-tetrahydroindenyl)zirconium dichloride (compound of formula VIa), **wherein** a dihalozirconium bis(2,4,6-trimethylphenoxyde) compound (compound of formula 1) is reacted with ethane-1,2-diybisindenylidilithium (compound of formula 11) to form ethanediylbis(indenyl)zirconium bis(2,4,6-trimethylphenoxyde) (compound of formula III) which is subsequently hydrogenated to ethanediylbis(4,5,6,7-tetrahydroindenyl)zirconium bis(2,4,6-trimethylphenoxyde) (compound of formula VI) and the phenoxyde groups are subsequently replaced.
6. (currently amended) A process as claimed in claim 1, any of claims 1 to 4 for preparing ethanediylbis (4,5,6,7-tetrahydroindenyl)zirconium dichloride (compound of formula VIa), wherein a dihalozirconium bis(2,4-di-tert-butylphenoxyde) compound (compound of formula I) is reacted with ethane-1,2-diybisindenylidilithium (compound of formula II) to form ethanediylbis(indenyl)zirconium bis (2,4-di-tert-butylphenoxyde) (compound of formula III) which is subsequently hydrogenated to ethanediylbis(4,5,6,7-tetrahydroindenyl)zirconium bis(2,4-di-tert butylphenoxyde) (compound of formula VI) and the phenoxyde groups are subsequently replaced.
7. (New) A process as claimed in claim 2, wherein the hydrogenation is carried out in the presence of homogeneous or heterogeneous catalysts which contain Pt, Pd, Rh, Ru, Os or nickel, Raney nickel, their oxides, salts or complexes, mixtures thereof, and optionally on a catalyst support, and in the presence of Pd on activated carbon.